

# SIMULIA Professional Services Solutions



# SIMULIA Professional Services

## Gain Your Competitive Edge

### Industry Expertise for Proven Results

The goal of the SIMULIA Professional Services organization is to help our customers to be more competitive by providing high-quality and cost-effective training, support, and consulting services.

Our regionally-located professionals work closely with you to identify and implement the right solution. Whether you need to boost your analysis skills, increase group productivity, extend your resources, or gain faster returns on your software investment, our staff of industry experts is readily available.

Our established technical expertise, global operations, and affiliation with our parent company, Dassault Systèmes, enable our engineering professionals to assist customers in multiple areas. We can help you with your Abaqus Unified FEA software applications, offer analysis project consulting, or work with you to implement enterprise simulation solutions that are proven to improve quality, reduce cost, and deliver measurable efficiency gains.

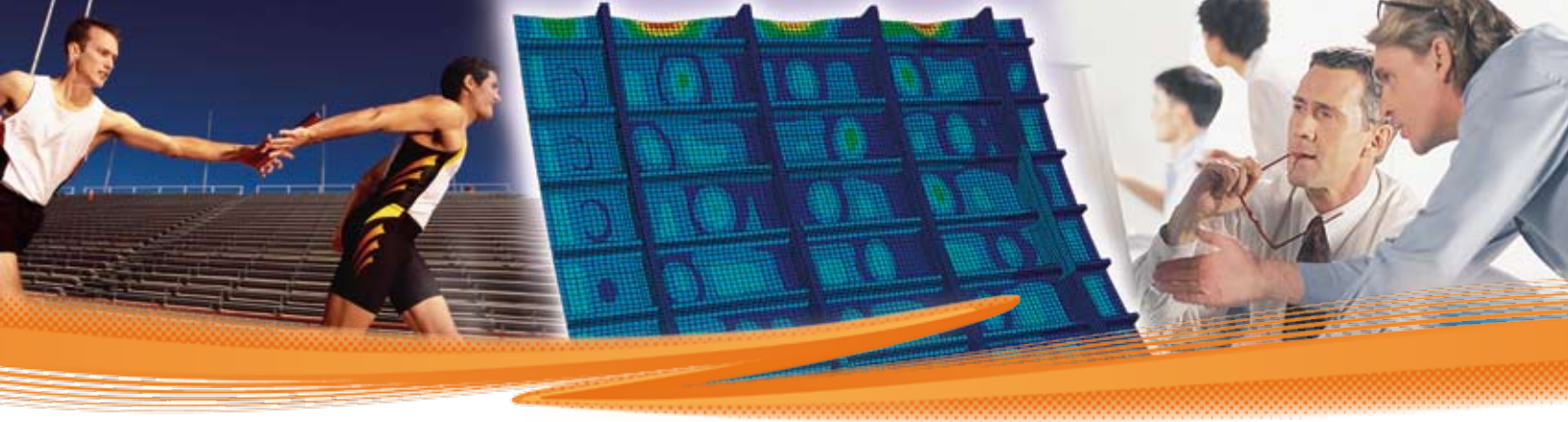
### SIMULIA Professional Services

- Development and Deployment of Robust Simulation Methods
- Applied to Mature, Accepted and Design-relevant Workflows
- Focused on Maximum Return on Investment
- Extended and Integrated into the Enterprise

### Partnership Benefits

- Shorter Implementation Time
- Increased Staff and Process Efficiency
- Planned and Supported Implementation Success





## Services to Meet Your Needs

### A Plan for Success

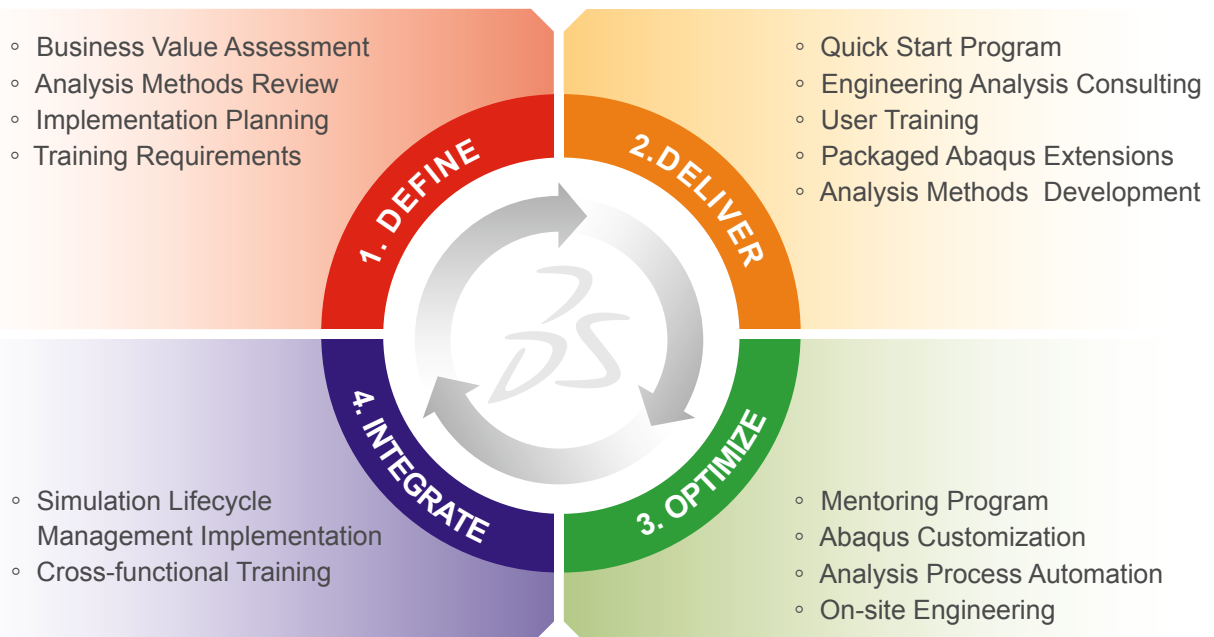
Our regional service teams are well-known for performing engineering analysis projects on an as-needed basis. We are adopting a “continuous care” services strategy where our engineering professionals work with you to review your current processes, challenges, and goals, and then create a plan that can be followed to achieve the greatest efficiencies and long-term return on your investment. This strategy benefits our customers by planning the right service resource at the right time.

At your request, we can perform a Business Value Assessment. This process captures information about your product development goals and simulation practices to assist in defining the right plan for your needs. Our professionals work with you to create a blueprint for your implementation that includes a complete definition of the project, a realistic schedule of deliverables, and a clear cost and ROI estimate.

### Services Portfolio

- Quick Start Program
- Engineering Analysis Consulting
- Training: Standard, Custom, On-site
- Methods Development
- Mentoring Program
- Abaqus Customization
- Abaqus Software Extensions
- Analysis Process Automation
- Onsite Engineering Consulting
- Simulation Lifecycle Management Implementation

## SIMULIA Professional Services





## The Right Resources for You

### Quick Start Program

This packaged services engagement offers the best combination of SIMULIA services to get your team on the fast track to enhanced productivity. Our simulation Quick Start Program combines software installation support, Abaqus overview training, and on-site mentoring in a cost-effective, two-week package. We place an experienced engineer on site to provide you with the most efficient startup possible—from installation to initiating your first analysis project.

### Training and Support

SIMULIA offers a variety of training services to help our customers successfully use our Abaqus Unified FEA product suite, Multiphysics capabilities, and Simulation Lifecycle Management solution. Our regional offices offer a comprehensive schedule of training courses ranging from introductory to advanced topics.

If you have several people to be trained, it may be cost-effective to hold a training course at your location. Additionally, our services teams can customize training courses based on your specific requirements. This allows you to tailor the agenda and use model examples that include your typical geometries, materials, and design procedures.

SIMULIA provides high-quality technical support and related services as an important part of our relationship with our customers. We offer a number of convenient ways to get your problems solved and your questions answered. From front-line support through our local offices and representatives, to My Support—a 24/7 password-protected, Web-based support system—SIMULIA can provide you with support services anywhere, anytime.

### Engineering Analysis Consulting

Our SIMULIA Professional Services staff is available to perform basic-to-advanced analysis consulting for a wide range of applications and industries.

Examples of projects include expert consulting for unique analysis jobs, contracted services (on- or off-site) to assist with major projects, short-term peak workload assistance to meet tight deadlines, or full-time on-site consulting services.

#### Example Consulting Projects:

- Linear and Nonlinear Stress
- Nonlinear Contact, Including Drop or Impact Analysis
- Fluid-structure Interaction
- Thermal Analysis
- Fatigue, Fracture, Failure
- Durability Analysis
- Noise & Vibration
- Manufacturing Processes, such as Metal Stamping, Spin Forming, Forging, Cutting, Rolling, Embossing, Material Handling, Boring, Milling, and Welding



## Extend Your Simulation Capabilities

### Methods Development

Validated and approved simulation methods can make a significant difference when developing simulation models for realistic analysis. With this service, analysis methods are created and integrated with your design process to meet your specific needs. By combining your process knowledge with our analysis expertise, we can develop validated and documented analysis methods that deliver significant efficiencies and cost savings.

### Mentoring Program

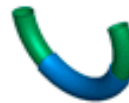
With this program, you will have the advantage of “on-call” simulation expertise. This remote service pairs your team with a senior SIMULIA engineer to work on your specific engineering implementation. This service helps ensure that you are on track with your simulation methods by providing validation for your model setup or simply brainstorming for ideas to improve analysis fidelity. We offer tiered mentoring plans that range from hourly engagements to yearly fixed-price contracts that deliver added value to your product development process.

### Abaqus Customization

Abaqus FEA software provides flexible customization capabilities that enable users to include specialized material models, elements, output variables, loads, and boundary conditions. Such customization can significantly enhance productivity and assist in achieving results tailored to your specific problem. Our extensive Abaqus and industry experience allows our engineers to customize your implementation efficiently and cost-effectively.

### Abaqus Software Extensions

Our regional SIMULIA Professional Services teams have developed Abaqus Extensions that provide capabilities for specialized applications. These extensions are available for purchase, and can be customized to meet your specific need.



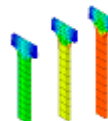
#### Adjustable Rigid Torus (ART)

Provides a graphical user interface (GUI) to simplify stent or tube-in-tube analyses



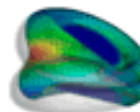
#### Composite Filament Winding

Enables detailed specification of structural geometry and winding layout parameters



#### Finite Elasto-Plasticity Material Model

A material model with nonlinear elastic finite strain behavior



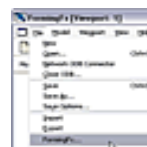
#### Large Strain Hysteresis Model

Augments the capabilities of Abaqus/Explicit through a VUMAT material definition, which can be useful for shock and vibration isolation



#### PCB Modeler

Automates the import and meshing of printed circuit board geometry



#### Sheet-Forming Solution Mapping

Maps sheet-forming effects such as thickness variation and plastic strains from a forming analysis into an Abaqus finite element model



## Enhance Your Productivity

### Analysis Process Automation

By capturing standard workflows and proven methods through a customized user interface or open standards like HTML, process automation solutions enable you to significantly enhance productivity. Our engineers can embed sophisticated techniques in day-to-day engineering activities, enabling your design and analysis teams to collaborate effectively through the use of common simulation technology and proven methods. Our services team has experience in delivering a wide range of process automation solutions, from complete vertical applications to simple task and workflow automation.

### On-site Engineering Consulting

For the most in-depth and rapid response, SIMULIA engineers are available for short or long-term on-site consulting and implementation assistance. By working in your production environment, our on-site engineers can perform advanced analyses, document methods, train your staff, and perform other duties that are specific to your day-to-day operations.

This global service option is offered to our customers when the need for on-site expertise in engineering simulation is required during business peaks, or when specialized engineering analysis is required over an extended period of time.

SIMULIA engineers are highly educated and skilled in mechanical engineering and in the use of Abaqus. SIMULIA on-site engineering services help you realize the maximum benefit in the application of realistic simulation.

### Sample Process Automation Project



SIMULIA engineers worked with Glass Service Improve BV, a provider of advanced solutions for glass manufacturing, to develop an automated remeshing technique to simulate a multistage manufacturing process involving viscous materials that are subjected to high temperatures, large geometry deformation, and complex contact. This innovative process allows designers to accurately evaluate the optimum blow mold process in a virtual environment.

### Peter Nannucci Recognized by Boeing



The Boeing Company recently awarded Peter Nannucci, Sr. Services Engineer at SIMULIA Eastern Region, their Quality Pride Award. This award recognizes Peter's outstanding performance in his role as a Boeing On-site Senior Abaqus Support Specialist.

"Peter exceeded our expectations," stated Frank Smith, Associate Technical Fellow, Structural Technology and Prototyping at Boeing Rotorcraft. "He developed an outstanding reputation for the quality of his work—both directly supporting our various programs and in his consulting capacity."

The Quality Pride Award was awarded to Peter by Frank Smith, Ahsan Iqbal (Sr. Manager, Structural Analysis), and Mike Warburton (Sr. Manager, Mechanical and Structural Engineering), all of the Boeing Rotorcraft division in Philadelphia.



# Secure Your Intellectual Property

## Simulation Lifecycle Management

The use of virtual simulation technologies has proven to be an effective way for companies to drive innovation, explore design alternatives, and evaluate product performance more efficiently than with physical testing. However, the intellectual property (IP) generated in this activity is often simply lost. In fact, companies spend millions on performing simulations but often fail to capitalize on much of the generated value.

SIMULIA offers a Simulation Lifecycle Management solution that enables you to manage simulation data, processes, and applications as an integral part of your product development process.

SIMULIA SLM, built on the ENOVIA world-class PLM infrastructure, accelerates product development by providing you with timely access to the right information through secure storage, search, and retrieval with distinct functionality dedicated specifically to simulation processes and data. It maximizes the value of your company-generated simulation IP through the capture, re-use, and deployment of simulation data and best practices for collaborative product development.

With SIMULIA SLM, you can:

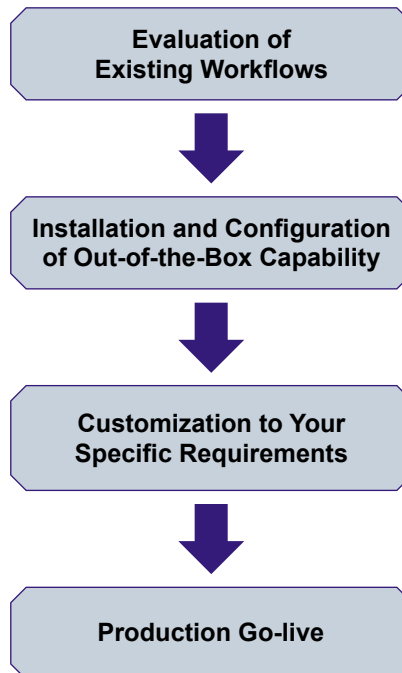
- Improve simulation data quality and traceability
- Increase quality and productivity by accessing the right data quickly
- Improve confidence in simulation results by deploying best practices
- Accelerate decision-making by sharing simulation information with distributed teams
- Secure intellectual property by controlling access privileges

## SLM Implementation Services

SIMULIA provides SLM implementation services to help you integrate your simulation processes within established Product Lifecycle Management environments. SIMULIA Professional Services can help you implement SIMULIA SLM right out of the box, provide needed configurations, or create a customized SLM solution to meet your specific requirements.

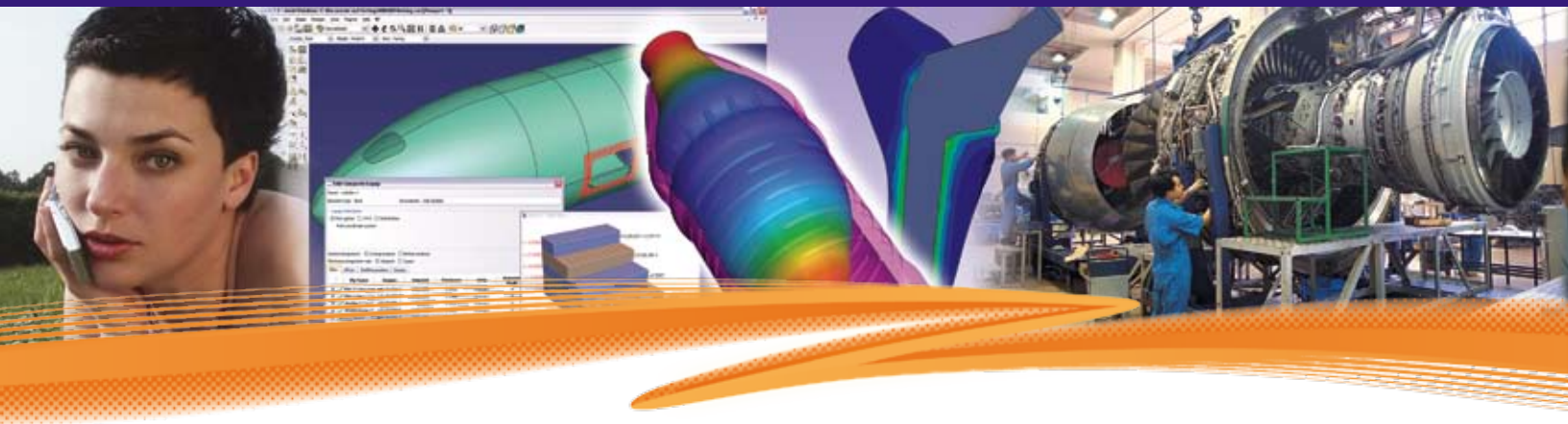


## SLM Implementation Process



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### About SIMULIA

SIMULIA is the Dassault Systèmes brand that delivers a scalable portfolio of realistic simulation solutions including the Abaqus product suite for Unified Finite Element Analysis, multiphysics solutions for insight into challenging engineering problems, and lifecycle management solutions for managing simulation data, processes, and intellectual property. By building on established technology, respected quality, and superior customer service, SIMULIA makes realistic simulation an integral business practice that improves product performance, reduces physical prototypes, and drives innovation. Headquartered in Providence, RI, USA, with R&D centers in Providence and in Suresnes, France, SIMULIA provides sales, services, and support through a global network of over 30 regional offices and distributors.

For more information, visit [www.simulia.com](http://www.simulia.com).

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